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ZINC IN SEPTEMBER 2003

Domestic mine production in September, at 65,900 metric tons (t), was about 6% more than in August and about 15% more than in September 2002. Smelter production, estimated at 21,600 t, was about 8% less than in August, but was about 21% more than a year before. Apparent consumption, at 90,700 t, was about 7% higher than in August, but was about 2% lower than in September 2002.

The Platts Metals Week average monthly composite price for North American Special High Grade zinc declined to 40.07 cents per pound in September. Compared with September 2002, the zinc price was about 6%, or about 2.26 cents, more.

According to CRU International Ltd., the zinc price may further improve if producers succeed in holding metal production below demand for at least 6 to 9 months. Given the stagnation of Western zinc consumption, any reversal of recent mine cutbacks, such as the reactivation of idle operations and the commissioning of presently uncommitted ventures, could result in higher metal output at smelters that are currently underutilized. Almost one-half of the 600,000 metric tons per year (t/yr) of Western mine capacity forced to close by low prices since 2000 is on care and maintenance, costing mining companies millions of dollars without any income. Another 500,000 t of mine output could be produced from projects that, in view of low zinc prices, are currently labeled "probable." However, if mining companies will restrain their tendency to increase production in order to take advantage of lower unit cost, the metal stocks will likely fall steadily in the next 5 years, giving a boost to zinc prices. Because of constrained concentrate supply, London Metal Exchange (LME) stocks and consumer/producer inventories have been inactive for the past 5 months. The closures of four primary smelters in Europe (Avonmouth, United Kingdom; Noyelles-Godault, France; Titov Veles, Macedonia; and Porto Vesme, Italy) and the Cockle Creek smelter in Australia could help to keep zinc metal production below consumption or at least balance the capacity increases in China and the Commonwealth of Independent States (CRU International Ltd., 2003b).

OntZinc Corp. of Canada, through its Saint Lawrence Zinc Co., has completed the purchase of the Balmat Mine in upstate New York from Horsehead Industries Inc. OntZinc needs financing to bring the mine back on line and hopes to make a first shipment of zinc concentrate in 2004. The company plans to process ore at a rate of 440,000 t/yr and increase it to 500,000 t/yr by the third year of operations (CRU International, 2003c). Balmat currently has a mine life of 10 years. The purchase price of $20 million is payable out of 30% of net cash flow from operations after allowing for reasonable capital and exploration expenditures. An additional $5 million will be paid if the zinc price will remain above 70 cents per pound ($1,543/t) for two of the first five years (Platts Metals Week, 2003).

Noranda Inc. is to close its Bell-Allard zinc mine in Matagami, Quebec, in the fourth quarter of this year, due to depletion of ore reserves. Development of its Perseverance zinc deposit, which was to replace Bell-Allard production, has been postponed, owing to weak market conditions and depressed zinc prices. From the time the development is launched, it will take about 2 years for development and start-up activities before achieving commercial production levels at the Perseverance Mine. Since its discovery in 2000, Noranda invested $10 million in the Perseverance deposit, including a drilling and feasibility study. The high-grade deposit consists of three zones: Perseverance, Perseverance West, and Equinox, located in the Matagami region in Quebec. Reserves are estimated at 5.1 million metric tons (Mt) grading 15.8% zinc, 1.2% copper, 29 grams per metric ton (g/t) silver, and 0.4 g/t gold (Metal-Pages, 2003e§[1]).

China has become the largest importer of U.S. zinc scrap, according to the U.S. Department of Commerce. For the first 7 months of 2003, U.S. zinc scrap exports to China increased by 32% compared with the same period of 2002. In July alone, a total of 3,390 t of zinc scrap was exported, of which China imported 2,830 t, accounting for 83% of all the U.S. zinc exports (Metal-Pages, 2003b§). Consumption of zinc, mostly for galvanizing, continues to increase in China. Within a year, 1.4 Mt of new hot-dip galvanizing capacity is to be put into production, which will consume an additional 50,000 t to 60,000 t of zinc metal. Domestic consumption will likely be boosted by

[1]References that include a section mark (§) are found in the Internet References Cited section.

an expected lowering of the export rebate to 11% from the current average of 15%. The 16% increase in concentrate output between January and August, compared with the same period in 2002, helped domestic smelters that were increasingly dependent on imported concentrates. Chinese output of refined zinc in 2003 could be about 2.1 Mt, a 2% increase over 2002 output (Antaike, 2003).

After management and union representatives failed to resolve the issue of high prices at a meeting with Italian Government officials, Glencore International AG of Switzerland decided to close its Porto Vesme metallurgical complex in Sardinia, Italy. About 90% of the workforce will be laid off when the complex closes by yearend. The Porto Vesme complex consists of an 80,000-t/yr Imperial Smelter Process zinc facility, a 110,000-t/yr electrolytic zinc plant, a 90,000-t/yr Kivcet lead smelter, and a 120,000-t/yr lead refinery (Mining Journal, 2003). Although the closure of Porto Vesme will have only a small effect on the supply of refined zinc, lost capacity due to closures of other primary processors in Europe will change Western zinc supply from a small surplus in 2002 to a large deficit in 2003. Zinc concentrate for Porto Vesme will be redirected to Xstrata plc's San Juan de Nieva smelter. Spain lost its local supply of zinc concentrate when the Reocin Mine in Santander closed in May 2003 (CRU International, 2003a).

According to its September quarterly report, Consolidated Broken Hill Ltd. sent the first shipment of 11,600 t of zinc concentrate from the company's recently acquired Endeavor Mine (formerly called Elura). Production is on target to reach the mine-s former capacity of 1.2 Mt of ore by December 2003. A further increase to 1.4 Mt of ore is planned for the first half of 2004. Additional improvements to be implemented by the company will lower the operating cost, presumably just in time for anticipated improvement in zinc prices (Metal-Pages, 2003a§).

Update

Falconbridge Ltd. of Canada reported earnings of $100 million for the 9 months ended September 30, 2003, compared with earnings of $27 million for the corresponding period in 2002. Copper and zinc production from the Kidd Creek Mine was lower than for the same period in 2002 due to rehabilitation work in the upper mine, but should increase for the remainder of 2003. The zinc production forecast for this year has been revised to about 85,000 t. Zinc operations at the Falconbridge Kidd Creek zinc refinery in Timmins, northern Ontario, were restarted in October after a 13-week shutdown due to low zinc prices. The start-up had gone smoothly without any technical hitches (Metal-Pages, 2003c§).

Teck Cominco Ltd. of Canada has reported net earnings of $14 million for the third quarter of 2003, a nearly fourfold increase from $4 million in the same period in 2002. The increase in profits reflects improved metal prices, mainly for copper; the average increase for zinc in the third quarter was 9%. Operating profit in the third quarter was $53 million—including $14 million from the Red Dog Mine in Alaska, which benefitted from higher throughput, ore grades, and zinc prices as well as benefitting from lower operating costs. The zinc recovery rate, however, was lower than a year before. Zinc production at Trail, British Columbia, was 71,300 t in the third quarter compared with 49,900 t in the third quarter of 2002, when the refinery was closed in August (Metal-Pages, 2003d§). Teck Cominco has agreed to purchase Western Metals Ltd.'s mineral properties, plant, equipment, and infrastructure at the Lennard Shelf in Western Australia for about $18 million. The transaction is subject to completion of an orderly suspension of operations, which should be completed late in 2003. While the mines are on care and maintenance, Teck Cominco is to prepare a redevelopment plan, including a detailed review of reserves, as well as mine planning and further exploration to define and expand resources and reserves. The decision to restart the Lennard Shelf mines will depend on the outcome of the pre-development program and on zinc market conditions and exchange rates. During the last fiscal year, which ended on June 30, 2003, Lennard Shelf mines produced 176,000 t of zinc and 70,000 t of lead in concentrate (Metal-Pages, 2003f§).

References Cited

Antaike, 2003, Market analysis: Antaike Monthly, no. 84, October, 16 p.

CRU International Ltd., 2003a, Another zinc smelter lossCCRU MonitorCLead and zinc concentrates: CRU International Ltd., October, p. 3.

CRU International Ltd., 2003b, Executive summary, CRU Zinc quarterly industry and market outlook, January 2003, p. 1-10.

CRU International Ltd., 2003c, Industry newsCCRU MonitorCLead and zinc concentrates: CRU International Ltd., October, p. 11.

Mining Journal, 2003, Glencore to close Porto Vesme: Mining Journal, v. 341, no. 8755, September 26, p. 244.

Platts Metals Week, 2003, Balmat zinc mines sold: Platts Metals Week, v. 74, no. 39, September 29, p. 11.

Internet References Cited

Metal-Pages, 2003a (October 31), CBH ships first cons from Endeavor, accessed October 3, 2003, at URL http://www.metal-pages.com.

Metal-Pages, 2003b (October 21), China buys record quantities of USA=s zinc scrap, accessed October 22, 2003, at URL http://www.metal-pages.com.

Metal-Pages, 2003c (October 20), Falconbridge earnings sour, accessed October 21, 2003, at URL http://www.metal-pages.com.

Metal-Pages, 2003d (October 23), Higher prices and production nearly quadruple Teck Cominco's Q3 profits, accessed October 27, 2003, at URL http://www.metal-pages.com.

Metal-Pages, 2003e (October 15), Noranda to close Bell-Allard in Q4, accessed October 16, 2003, at URL http://www.metal-pages.com.

Metal-Pages, 2003f (October 13), Teck Cominco agrees A$26m Lennard Shelf purchase, accessed October 14, 2003, at URL http://www.metal-pages.com.

TABLE 1
SALIENT ZINC STATISTICS[1]

(Metric tons, unless otherwise specified)

	2002	2003			
	January-December	July	August	September	January-September
Production:					
Mine, zinc content of concentrate	780,000	67,000	62,000	65,900	581,000
Mine, recoverable zinc	754,000	64,500	59,600	63,400	559,000
Smelter, refined zinc	259,000	22,100	23,500	21,600	206,000
Consumption:					
Refined zinc, reported	421,000	34,200	35,500 r	36,800	315,000
Ores[e] (zinc content)	727	61	61	61	545
Zinc-base scrap[e] (zinc content)	189,000	15,900	15,900	15,900	143,000
Copper-base scrap[e] (zinc content)	176,000	14,700	14,700	14,700	132,000
Aluminum-and magnesium-base scrap[e] (zinc content)	1,430	120	120	120	1,080
Total[e]	789,000	64,900	66,300 r	67,500	592,000
Apparent consumption, metal[2]	1,150,000	85,400	85,000	90,700	791,000 [3]
Stocks of refined (slab) zinc, end of period:					
Producer[4]	XX	8,360	8,230	7,790	XX
Consumer[5]	XX	56,100	54,900	53,300	XX
Merchant	XX	10,100	9,810	9,810	XX
Total	XX	74,500	73,000	70,900	XX
Shipments of zinc metal from Government stockpile	5,040	3,530	712	841	6,800
Imports for consumption:					
Refined (slab) zinc	874,000	59,300	66,400	NA	503,000 [6]
Oxide (gross weight)	69,700	13,000	8,020	NA	65,300 [6]
Ore and concentrate (zinc content)	122,000	23,000	5,440	NA	94,300 [6]
Exports:					
Refined (slab) zinc	1,160	95	216	NA	963 [6]
Oxide (gross weight)	10,800	1,240	1,140	NA	8,170 [6]
Ore and concentrate (zinc content)	822,000	88,000	236,000	NA	452,000 [6]
Waste and scrap (gross weight)	47,700	4,070	4,420	NA	30,400 [6]
Price:					
London Metal Exchange, average, dollars per metric ton	$778.38	$827.19	$817.48	$817.81	$793.20
Platts Metals Week North American Special High Grade, average, cents per pound	38.64	40.54	40.10	40.07	39.03

[e]Estimated. [r]Revised. NA Not available. XX Not applicable.

[1]Data are rounded to no more than three significant digits; except prices; may not add to totals shown.

[2]Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

[3]Data based on reported consumption, stocks, and estimated trade data.

[4]Data from U.S. Geological Survey and American Bureau of Metal Statistics.

[5]Includes an estimate for companies that report annually.

[6]Includes data through August only.

TABLE 2
REFINED ZINC PRODUCED IN THE UNITED STATES[1]

(Metric tons)

Month	Beginning stocks[2]	Production	Shipments	Ending stocks[2]
2002:				
September	7,010	17,900	17,400	7,470
October	7,470	16,100	16,600	7,020
November	7,020	21,800	20,800	7,970
December	7,970	23,500	22,900	8,550
Year	XX	259,000	257,000	XX
2003:				
January	8,550	24,900	21,500	11,900
February	11,900	22,800	25,800	8,930
March	8,930	21,700	24,500	6,110
April	6,110	23,000	20,700	8,340
May	8,340	22,400	23,500	7,300
June	7,300	24,200	23,700	7,770
July	7,770	22,100	21,500	8,360
August	8,360	23,500	23,600	8,230
September	8,230	21,600	22,100	7,790
January-September	XX	206,000	207,000	XX

XX Not applicable.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes stocks held at locations other than smelters.

Sources: U.S. Geological Survey and American Bureau of Metal Statistics.

TABLE 3
APPARENT CONSUMPTION OF REFINED ZINC ACCORDING TO INDUSTRY USE AND PRODUCT[1]

(Metric tons)

Industry and product	2002 January-December	2003 July	2003 August	2003 September[2]	2003 January-September
Galvanizing:					
Sheet and strip	477,000	36,100	36,100 r	37,600	335,000
Other	175,000	12,000	11,500 r	12,500	111,000
Total	652,000	48,000	47,600 r	50,100	446,000
Brass and bronze	189,000	12,200	12,800	15,000	126,000
Zinc-base alloy	233,000	18,400	17,900 r	18,800	168,000
Other uses[3]	71,700	6,800	6,600	6,800	51,300
Grand total	1,150,000	85,400	85,000	90,700	791,000

[r]Revised
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Data based on reported consumption, stocks and estimated trade data.
[3]Includes zinc used in making zinc dust, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, rolled zinc, and miscellaneous uses not elsewhere specified.

TABLE 4
AVERAGE MONTHLY ZINC PRICES[1]

Period	North American ¢/lb.	LME cash ¢/lb.	LME cash $/t
2002:			
September	37.81	34.29	755.88
October	37.71	34.21	754.30
November	38.09	34.70	764.91
December	39.69	36.17	797.36
Year	38.64	35.31	778.38
2003:			
January	38.72	35.43	781.01
February	38.68	35.60	784.80
March	38.88	35.86	790.60
April	37.23	34.21	754.30
May	38.18	35.17	775.33
June	38.87	35.85	790.31
July	40.54	37.52	827.19
August	40.10	37.08	817.48
September	40.07	37.10	817.81
January-September	39.03	35.98	793.20

[1]Special High Grade.

Source: Platts Metals Week.

TABLE 5
U.S. EXPORTS OF ZINC[1]

Material	2002 Quantity (metric tons)	2002 Value (thousands)	2003[2] August Quantity (metric tons)	2003[2] August Value (thousands)	2003[2] Year to date Quantity (metric tons)	2003[2] Year to date Value (thousands)
Refined (slab) zinc	1,160	$1,210	216	$219	963	$991
Ore and concentrate (zinc content)	822,000	322,000	236,000	105,000	452,000	175,000
Waste and scrap (gross weight)	47,700	23,000	4,420	3,070	30,400	19,300
Powders, flakes, dust (zinc content)	5,660	8,120	646	926	4,440	5,870
Oxide (gross weight)	10,800	14,600	1,140	1,370	8,170	10,000
Chloride (gross weight)	1,950	1,930	73	90	959	1,000
Sulfate (gross weight)	2,900	1,760	134	83	1,670	1,010
Compounds, other (gross weight)	217	600	17	24	118	302

[1]Data are rounded to no more than three significant digits.
[2]Data for September 2003 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF ZINC[1]

Material	2002		2003[2]			
			August		Year to date	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	874,000	$716,000	66,400	$57,100	503,000	$418,000
Ore and concentrate (zinc content)	122,000	44,600	5,440	2,200	94,300	29,600
Waste and scrap (gross weight)	31,200	9,530	547	308	6,970	3,570
Powders, flakes, dust (zinc content)	30,900	47,800	1,890	2,900	18,600	28,100
Oxide (gross weight)	69,700	57,600	8,020	5,520	65,300	48,700
Chloride (gross weight)	716	775	87	108	474	595
Sulfate (gross weight)	20,100	10,300	1,540	609	18,700	8,430
Compounds, other (gross weight)	1,030	1,180	64	66	490	534

[1]Data are rounded to no more than three significant digits.
[2]Data for September 2003 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 7
SHIPMENTS OF ZINC METAL FROM THE NATIONAL DEFENSE STOCKPILE[1]

(Metric tons)

Period	Beginning inventory	Shipments	Ending inventory
2002:			
September	110,000	--	110,000
October	110,000	1,130	109,000
November	109,000	--	109,000
December	109,000	--	109,000
Year	XX	5,040	XX
2003:			
January	109,000	516	108,000
February	108,000	--	108,000
March	108,000	--	108,000
April	108,000	200	108,000
May	108,000	997	107,000
June	107,000	--	107,000
July	107,000	3,530	104,000
August	104,000	712	103,000
September	103,000	841	102,000
January-September	XX	6,800	XX

XX Not applicable. -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.

Source: Defense Logistics Agency.

TABLE 8
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY[1, 2]

(Metric tons)

	General imports			Imports for consumption		
		2003			2003	
Material and country	2002	August	Year to date	2002	August	Year to date
Ore and concentrate (zinc content):						
Australia	41,800	--	20,200	41,800	--	20,200
Ireland	6,570	--	25,700	6,570	--	25,700
Mexico	12,700	--	1,460	12,700	--	1,460
Peru	61,100	5,440	47,000	61,100	5,440	47,000
Other	118	--	--	118	--	--
Total	122,000	5,440	94,300	122,000	5,440	94,300
Blocks, pigs, or slab:						
Australia	35,000	8,010	22,000	21,000	--	14,000
Brazil	30,200	1,330	15,900	30,200	1,330	10,700
Canada	523,000	40,700	337,000	523,000	40,700	337,000
China	39,700	--	23,800	1,040	--	22
Japan	10,500	--	50	--	--	--
Kazakhstan	93,200	--	12,000	93,200	--	12,000
Korea, Republic of	76,200	--	34,000	2,480	7	24
Mexico	136,000	13,300	91,800	136,000	13,300	91,800
Peru	36,000	3,090	28,800	34,300	3,090	28,300
Poland	9,340	--	1,600	9,340	--	1,600
Russia	10,700	--	--	10,700	--	--
Other	25,200	8,880	8,930	13,100	8,000	8,000
Total	1,020,000	75,300	576,000	874,000	66,400	503,000
Dross, ashes, fume (zinc content)	15,500	1,080	9,190	15,500	1,080	9,190
Grand total	1,160,000	81,800	679,000	1,010,000	72,900	607,000
Oxide (gross weight):						
Canada	44,800	3,790	31,700	44,800	3,790	31,700
China	838	40	404	838	40	404
Japan	869	112	680	869	112	680
Mexico	19,900	3,580	26,100	19,900	3,580	26,100
Netherlands	2,640	455	3,290	2,640	455	3,290
Other	760	50	3,140	760	50	3,140
Total	69,700	8,020	65,300	69,700	8,020	65,300
Other (gross weight):						
Waste and scrap	31,200	547	6,970	31,200	547	6,970
Sheets	1,640	90	1,310	1,640	90	1,310
Powders, flakes, dust (zinc content)	30,900	1,890	18,600	30,900	1,890	18,600

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Data for September 2003 were not available at time of publication.

Source: U.S. Census Bureau.